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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/505,516 02/17/00 KARABEYOGLU

M A-67587-1/AJ

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EXAMINER

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ART UNIT

PAPER NUMBER

3641

DATE MAILED:

07/28/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Offic Action Summary	Application No.	Applicant(s)	
	09/505,516	KARABEYOGLU ET AL.	
	Examiner	Art Unit	
	Edward A. Miller	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 14-21 and 48 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 14-21 and 48 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - a) All b) Some * c) None of the CERTIFIED copies of the priority documents have been:
 1. received.
 2. received in Application No. (Series Code / Serial Number) _____.
 3. received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

(4) from parent case.

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 62.
- 18) Interview Summary (PTO-413) Paper No(s) _____.
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other:

Art Unit: 3641

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 14-21 and 48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims appear, as best understood, to merely require a mental calculation and a mental step of selecting. This is a thought process. Although the invention is not necessarily a computer program, the principle applies to a mathematical calculation, or mental steps. See MPEP 2106, in relevant part:

The subject matter courts have found to be outside the four statutory categories of invention is limited to abstract ideas, laws of nature and natural phenomena. While this is easily stated, determining whether an applicant is seeking to patent an abstract idea, a law of nature or a natural phenomenon has proven to be challenging. These three exclusions recognize that subject matter that is not a practical application or use of an idea, a law of nature or a natural phenomenon is not patentable. See, e.g., *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) ("idea of itself is not patentable, but a new device by which it may be made practically useful is"); *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94, 40 USPQ 199, 202 (1939) ("While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."); *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759 ("steps of locating' a medial axis, and 'creating' a bubble hierarchy . . . describe nothing more than the manipulation of basic mathematical constructs, the paradigmatic abstract idea'").

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are so indefinite that they cannot be understood. Nowhere is there any proper antecedent basis that would relate the properties of the propellant that are determined in calculating

the equation in line 4 of claim 14, with the propellant composition itself. Further, there is no stated basis for relating of determining what values a “given port mass flux” has or may have. This all appears theoretical; nothing appears to be concrete. Further, at line 5, the “port average gas velocity” is unstated, nor is there any correlation with any real world values. The actual gas velocity depends on the composition of the propellant burned, the shape and size of the combustion chamber, the conditions therein including the pressures and temperatures obtained therein, the burning rate exponent of the propellant, etc. There is no basis in the claims relating to any of these things. In line 6 of claim 14, there is not basis for what the “thickness h” is, nor is there any antecedent basis for “said fuel”, at the end of line 6. The rest of the formulae set forth cannot be determined as to what is required. In claim 20, as stated, to further limit the propellant, it appears that “fuel” and “oxidant” are the only possibilities for the propellant in overall character. If this is intended to recite only one of two possibilities for a hybrid, none of these limitations are stated, only implied, which is improper. Even if so, to state both possibilities of two possibilities is not to further limit the claim from which claim 20 depends. Claim 48 is indefinite as an improper use claim, without stating a method step. Further, “a particular application or mission” also further states nothing, no means to correlate what parameters are required for any such “application or mission.” Claim 48 provides for the use of the method, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. These are exemplary.

5. Claim 48 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte*

Dunki, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). See MPEP 2173.05(q).

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Certain basis or parameters or calculation steps, etc., set forth by reference to publications in the specification, appear critical or essential to the practice of the claimed invention. To the extent that this matter is essential, incorporation by reference to non-patent literature is not allowed. See MPEP 608.01(p).

8. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It does not appear that the variables of the propellants, the rocket or engine parameters, etc., necessary to carry out the calculations required in the claims, are adequately disclosed in the specification. These matters are critical or essential to the practice of the invention, but are not included in the claim(s) and are not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Further, if a computer is necessary to solve the computations, the specification does not set forth any computer details, or programs, which are necessary to practice the invention. These are exemplary.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This is the prior art of record in the parent application.

Art Unit: 3641

10. Any inquiry concerning either this or an earlier communication from the Examiner should be directed to Examiner Edward A. Miller at (703) 306-4163. Examiner Miller may normally be reached daily, except alternate Fridays, from about 9 AM to 7 PM.

If attempts to reach Examiner Miller by telephone are unsuccessful, his supervisor Mr. Jordan can be reached at (703) 306-4159. The Group fax number is (703) 305-7687.

If there is no answer, or for any inquiry of a general nature or relating to the application status, please call the Group receptionist at (703) 308-1113.

Miller/em
July 27, 2000



**EDWARD A. MILLER
PRIMARY EXAMINER**